A joint conference of the Imperial College London and British Society for Antimicrobial Chemotherapy

How to develop, deliver and measure safe and effective OPAT services

A conference for physicians, nurses, microbiologists and pharmacists involved in setting up or running OPAT services

Monday 5 December 2011
Regent College Conference Centre, London

Programme and poster abstracts

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Programme

Poster Abstracts

One year review of OPAT services at Buckinghamshire Healthcare Trust (BHT)

Introducing an OPAT database & Registry for the future
Gilchrist M1, Laundy M2, Nathwani D3, Guise T4, on behalf of the BSAC UK OPAT Initiative

Outpatient parenteral antimicrobial therapy (OPAT) as a nurse-led service: A district general hospital perspective.
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1 Cambridge University Hospitals NHS Foundation Trust and 2 University of Cambridge, Cambridge, United Kingdom

A comparison of ertapenem versus ceftriaxone for the treatment of cellulitis in the OPAT setting
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1 Cambridge University Hospitals NHS Foundation Trust, Cambridge; 2 Royal Hallamshire Hospital, Sheffield; 3 University of Cambridge, Cambridge

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Notes
### PROGRAMME

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| 09.15 | **Welcome and overview**  
*Frances Sanderson, London* |

**Session one: Service models for OPAT in practice**  
*Chair: Frances Sanderson, London*

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| 09.25 | **Infectious diseases led service**  
*Ann Chapman, Sheffield* |
| 09.50 | **Acute medicine led service**  
*Oonagh McGuiness, Welwyn Garden City* |
| 10.15 | **Microbiology led service**  
*Matthew Laundy, London* |
| 10.40 | **The role of the nurse in OPAT**  
*Jill Kayley, National Infusion and Vascular Access Society (NIVAS)* |

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<td>11.00</td>
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**Session two: OPAT - From inception to outcome measurement**  
*Chair: Matthew Laundy, London*

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| 11.30 | **I’m a manager - convince me! How to build a successful business case for management**  
*Sara McGee, London* |
| 11.50 | **Online support packages for OPAT: Online business case development toolkit, National OPAT database and UK outcomes registry**  
*Mark Gilchrist, London & Graeme Jones, Southampton* |
| 12.20 | **National standards for OPAT**  
*Ann Chapman, Sheffield* |
| 12.35 | **The national preceptorship programme - a 360 degree support package**  
*Graeme Jones, Southampton* |

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**Session three: Antimicrobial choices, administration & patient safety**  
*Chair: Mark Gilchrist, London*

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| 14.00 | **Administration and agent choices ......when to use:**  
- A home healthcare provider - *Luke Rudman, Evolution Homecare*  
- Vascular access devices - *Jackie Nicholson, Surrey* |
| 14.30 | **Horizon scanning new therapeutic agents for OPAT**  
*Andrew Seaton, Glasgow* |
| 14.45 | **IV to oral switch & role of oral therapies in OPAT for serious infections**  
*Matthew Dryden, Winchester* |
| 15.05 | **Oral agent support service for serious infections in the home setting**  
*To be confirmed* |
| 15.20 | **Managing penicillin allergy**  
*Sophie Farooque, London* |
| 15.40 | **Common pitfalls in managing cellulitis - knowing when to treat**  
*Linda Nazarko, Ealing PCT* |
| 16.00 | **Closing remarks**  
*Frances Sanderson, London* |
| 16.15 | **Close** |
**One year review of OPAT services at Buckinghamshire Healthcare Trust (BHT)**


Departments of Microbiology and Community and Integrated Care, Buckinghamshire Healthcare Trust, Stoke Mandeville Hospital, Mandeville Road, Aylesbury, Buckinghamshire HP 21 8AL.

Buckinghamshire Healthcare Trust (BHT) is an integrated acute and community Trust with 804 beds and 4 community hospital. A substantive outpatient parenteral antimicrobial therapy (OPAT) team was established in September 2010 with initially 2, then 3, specialist nurses and clinical support from the 4 consultant microbiologists in post. The service has focused on early supported discharge in its first year as well as training district and community hospital nurses to support the service. Patient care is shared between the OPAT team and referring clinician for early supported discharge. The team also regularly repatriate patients from neighbouring Trusts to deliver antimicrobials in the patient’s home – however responsibility for care and follow up of these patients remains with the neighbouring Trust. The OPAT team are now piloting a cellulitis admission avoidance service.

There were 110 referrals to the service by the end of September 2011 - resulting in 94 episodes of treatment of 91 patients. Most supported discharges were undertaken in Orthopaedics (61%), followed by Medicine (25%) and Plastics (10%). Early outcome data (within 4 weeks of completion of IV therapy) indicates an overall 77% success rate depending on condition (86% orthopaedic, 77% plastic and 73% medicine).

Further data summarising activity and longer term outcomes are presented in the poster.

**Introducing an OPAT database & Registry for the future**

Gilchrist M1, Laundy M2, Nathwani D3, Guise T4, on behalf of the BSAC UK OPAT Initiative

1. Associate, Centre for Medication Safety & Service Quality, Imperial College Healthcare NHS Trust and School of Pharmacy, University of London.
2. Consultant Microbiologist/Lead for OPAT. St Georges Healthcare NHS Trust.
3. Consultant Physician, Department of Infectious Diseases, Ninewells Hospital, NHS Tayside
4. Chief Executive Officer, BSAC

Throughout the United Kingdom, many OPAT centres use a variety of tools, usually self taught and build, to capture local clinical and service data. The functionality of these tools depends on local information technology (IT), resource and expertise.

The BSAC UK OPAT initiative database and registry work stream has worked very closely with IT experts, NHS organisations and end users to develop an application which will meet the needs of OPAT centres across the UK.

The database application has evolved into a sophisticated patient management tool allowing OPAT centres to manage clinical case load and facilitate management reporting. It consists of:

- A pre-admissions area
- A virtual OPAT ward giving instant information on the service
- A core database housing all clinical and service details of OPAT patients
- An anonymous patient questionnaire database
- A reporting function to view qualitative and qualitative OPAT service reports

The National OPAT registry application has been designed to allow OPAT centres to upload core anonymous reports. It will show real time data on OPAT services, allowing valuable knowledge and experiences to be shared.

The database has pan-European and international interest with colleagues in Ireland and Australia already considering trialling the application.
Outpatient parenteral antimicrobial therapy (OPAT) as a nurse-led service: A district general hospital perspective.
Gouliouris T1, Bioh G2, Karas JA1,2
1 Health Protection Agency, Addenbrooke’s Hospital, Cambridge, 2 Hinchingbrooke Health Care NHS Trust, Huntingdon.

Introduction
OPAT is established in many teaching hospitals, however its delivery in district general hospitals (DGH), where infectious diseases services have traditionally been absent, is not well described. OPAT was established at Hinchingbrooke hospital in 2006 as a protocol-driven nurse-led service with Consultant Microbiologist input and regular clinical reviews by the referring teams. The aim of this study was to review the first 3 years of OPAT activity and assess its clinical effectiveness and safety.

Methods
Retrospective case-note review of all patients admitted to OPAT from July 2006 till June 2009 using a structured proforma.
Patient suitability for OPAT was assessed by specially trained nurses against strict criteria. Antibiotic choice was agreed by the Consultant Microbiologist. All antimicrobials were prescribed according to standard dosing regimes except teicoplanin which was administered as a 16 mg/kg three times weekly dose following loading.

Results
112 patients received 124 OPAT courses during the study period (median age 60 years, range 19-86; male: female ratio 1.2:1). The commonest infection treated was skin and soft tissue (63%), followed by bone and joint (24%), urinary (7%), bacteraemia (3%), respiratory (2%) and intra-abdominal infection (1%). Ceftriaxone was the most commonly prescribed agent (47%), followed by teicoplanin (25%), ertapenem (14%), daptomycin (11%), gentamicin (2%) and vancomycin (1%). The median duration of treatment was 7 days (range 1-168). 87% of patients completed their treatment course to an endpoint of clinical cure or conversion to oral therapy. 6% were readmitted due to treatment failure and 2% had a drug reaction. No treatment failures were attributed to teicoplanin use. There were no deaths on OPAT and no cases of Clostridium difficile. 1,548 bed days were saved that represented an estimated potential cost saving of £464,400.

Conclusion
OPAT can be implemented safely and effectively in a DGH as a nurse-led service using strict patient selection criteria. Widespread ceftriaxone use did not lead to C. difficile infection in OPAT despite the advanced age of the patients.

A Prospective Audit – on the use of Intravenous antibiotics in outpatients at Sheffield Children’s Hospital
Sheffield Children’s Hospital

This is a descriptive audit over a one year period. The data is an interim analysis.

The aim was to identify the children attending as outpatients for intravenous (IV) antibiotics at Sheffield children’s hospital. The data shows the demographic profile of over 100 patients, the indications, antimicrobials prescribed, and duration of treatment.

Sheffield does not as yet have an outreach nursing service for general paediatrics. The audit findings will support development of an OPAT service.

Outpatient parenteral antibiotic therapy (OPAT): experience from a UK teaching hospital
Mayhew A1, Coggle S1, Nickerson E1, Gouliouris T1, Corrah T1, Martin K1, Santos R1, Aliyu S1, Carmichael A1, Török ME2
1 Cambridge University Hospitals NHS Foundation Trust and 2 University of Cambridge, Cambridge, United Kingdom

Introduction
OPAT is expanding rapidly in the United Kingdom, driven by the need to improve patient choice, provide care closer to home, and deliver cost savings. We have recently established an OPAT service and present a clinical and economic evaluation of the service.

Continued...
Aims
To determine the conditions treated, antibiotics used, duration of therapy with OPAT
To determine the complications and outcomes of OPAT
To determine the number of bed days saved and cost savings by OPAT

Methods
Study design: Observational cohort study of patients treated with OPAT at Cambridge University Hospitals NHS Foundation Trust
Procedures: Patients were assessed for eligibility by the OPAT team prior to commencement of therapy. OPAT was delivered by 3 methods: daily clinic attendance; administration by a community nurse; self-administration. Patients were reviewed, and blood tests were monitored, at least weekly during OPAT. Data were prospectively collected onto standardised data collection forms and entered into a computer database.

Results
167 patients were treated with OPAT between September 2010 and October 2011. The most common conditions were bone and joint infections (35%), cellulitis (35%), bacteraemia (11%); urinary tract infection (8%). The antibiotics used were ertapenem (42%), ceftriaxone (28%), teicoplanin (20%), daptomycin (5%). The median duration of therapy was 12 days (range 1 to 91 days). Outcomes at the end of OPAT were 65% improved, 22% cured, 2% no change, 8% patients re-admitted. 5% patients developed drug reactions. There were no cases of Clostridium difficile diarrhoea and no deaths. The number of bed days saved was 2,731, with estimated cost savings of £682,750 (patient-level costs) or £327,720 (hotel costs).

Conclusions
In carefully selected patients with infections requiring intravenous antibiotic therapy OPAT represents an efficacious and safe treatment option. Additional benefits include earlier discharge from hospital and attendant cost savings.

A comparison of ertapenem versus ceftriaxone for the treatment of cellulitis in the OPAT setting
Santos R1, Mayhew A1, Andrews D2, Chapman A2 and Török ME3
1 Cambridge University Hospitals NHS Foundation Trust, Cambridge; 2 Royal Hallamshire Hospital, Sheffield; 3 University of Cambridge, Cambridge.

Introduction
Ceftriaxone is commonly used to treat cellulitis in the OPAT setting. Increases in Clostridium difficile infection in the UK has resulted in the restriction of cephalosporin use in many NHS Trusts. Ertapenem may be a useful alternative, but no evidence exists to support its use.

Aims
The aims of the study were to compare the efficacy and safety of ertapenem versus ceftriaxone for the treatment of cellulitis in the OPAT setting.

Methods
Study design: Observational, non-randomised, open-label study of adults with moderate to severe cellulitis conducted at two UK centres. Subjects were treated with ceftriaxone 1 to 2 g daily (Sheffield) or ertapenem 1 g daily (Cambridge), according to local protocols. Treatment success was assessed at the end of the OPAT. Patients who had more than one episode of cellulitis requiring IV therapy within 28 days were excluded from the analysis.

Results
139 subjects were recruited between October 2010 and June 2011. Baseline characteristics were similar between the 2 groups although ischaemic heart disease was more common in the ceftriaxone group whereas immunosuppression was more common in the ertapenem group. Treatment was successful in 27/28 (96.4%) in the ertapenem arm and 110/112 (98.2%) in the ceftriaxone arms (p = 0.491, Fishers’ exact test). The median duration of treatment was 3 days for both antibiotics (Mann-Whitney U-test; z = 0.01, P = 0.496; two sided test). The duration of intravenous antibiotic therapy was 1 to 13 days for ertapenem and 1 to 20 days for ceftriaxone. There were 3 readmissions during the study period, all in the ceftriaxone arm. Drug reactions occurred in 2 patients, 1 in each arm. There were no line-related complications, no episodes of Clostridium difficile diarrhoea (Cambridge), and no deaths in either group.

Conclusions
Our findings suggest that ertapenem may be a suitable alternative to ceftriaxone for the treatment of cellulitis in the OPAT setting, where formulary restrictions prevent cephalosporin use.
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